

# Assessing the Harms of Cannabis Cultivation in Belgium\*

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*ESC Annual Conference  
Budapest, September 4-7, 2013*

\*Preliminary results of a project funded by Belgian Science Policy

# Cannabis: shift in cultivation, shift in policy?

- Rise of domestic production of cannabis herb (i.e., marijuana) since the 1980s in most consumer countries
- Large-scale cannabis cultivation is said:
  - to produce large revenues for organized crime groups
  - to be source of violence and corruption
- Law enforcement efforts primarily aim to reduce availability and to reduce organized crime profits and harms
- Cannabis is only drug for which thorough policy change is possible in mid-term

**How does cannabis cultivation in Belgium take place?  
Which harms are associated with it,  
and what are their severity, incidence and causes?**

# Outline

- Project methods and samples
- The harm assessment framework (Greenfield & Paoli, 2013)
- Constructing the business model of cannabis cultivation and identifying the related harms
- Assessing the severity and incidence of the harms and establishing their causes
- Concluding remarks

# Outline

## ➤ **Project methods and samples**

- The harm assessment framework (Greenfield & Paoli, 2013)
- Constructing the business model of cannabis cultivation and identifying the related harms
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# Research design and samples

- Quantitative and qualitative methods
- Ghent team: internet survey, part of GCCRC
  - 1,293 valid surveys from whole of Belgium: age 18-81, mostly males (90.9%), mostly micro (2-5 plants) and mini scale (6-49 plants) (73.4% < 5 plants; 98.3% <50 plants)
- Leuven team: qualitative data collection
  - 20 interviews in prison: aged 24-63, all males, 17 Belgian, 3 Dutch
  - 28 expert interviews, mostly from law enforcement
  - Analysis of 34 criminal cases opened in 2005-2011: 1-46 suspects per case, aged 18-69, mostly males (85.5%), Dutch and Belgian
  - mainly small scale (50-249 plants), middle scale (250-499), large scale (500-999) and industrial scale (>1.000 plants) growing operations (unclear)
- Data have obvious limitations, which are only partially alleviated by triangulation

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# Harm assessment framework

Construct business model



Identify possible harms and bearers  
(taxonomy)

Rate  
severity  
of harm  
(scale)



Evaluate severity and  
incidence of harm

Rate  
incidence of  
criminal activity  
and of harm in  
relation to  
criminal activity  
(scale)



Prioritize harms  
(matrix)



Establish causality of harm

# Taxonomy delineates type & bearers

	BEARER OF HARM			
	Individuals	Private-Sector Entities	Government Entities	Environment
TYPE OF HARM				
Functional integrity	X*	X**	X**	X***
Material interest	X	X	X	n/a
Reputation	X	X	X	n/a
Privacy	X	X	X	n/a

*Source:* authors drawing from von Hirsch and Jareborg (1991) and others.

*Notes:* X = applicable; n/a = not applicable;

\* Functional integrity = Physical and psychological integrity;

\*\* Functional integrity = Operational integrity;

\*\*\* Functional integrity = Physical, operational, and aesthetic integrity



# Common benchmarks gauge severity

SEVERITY RATING	Level of individual's living standard at which damage occurs	Level of entity's mission capability at which damage occurs
<b>Catastrophic</b>	1°: Subsistence, consisting of survival, but with maintenance of no more than elementary capacities to function	1°: Viability, consisting of survival, but with maintenance of no more than elementary capacities to function
<b>Grave</b>	2°: Minimal standard of living	2°: Minimal mission capabilities
<b>Serious</b>	3°: Adequate standard of living	3°: Adequate mission capabilities
<b>Moderate</b>	4°: Enhanced standard of living	4°: Enhanced mission capabilities
<b>Marginal</b>	Marginal or no effect at any level	Marginal or no effect at any level

- Drawn from von Hirsch and Jareborg's (1991) living-standard approach
- Extended to other bearers by analogy, e.g., from living standard to capability to achieve mission for private-sector and government entities

# Incidence provides grounding for prioritizing harms

Matrix of severity, incidence, and priorities

SEVERITY	INCIDENCE				
	Always	Persistently	Occasionally	Seldom	Rarely
Catastrophic	H	H	H	H/M	M/H
Grave	H	H	H/M	M/H	M
Serious	H	H/M	M/H	M	L
Moderate	H/M	M/H	M	L	L
Marginal	M/H	M	L	L	L

*Source:* authors based on Greenfield and Camm, 2005.

*Notes:* H = Highest priority; M = Medium priority; L = Lowest priority; we use “non applicable” for harms that are irrelevant in a particular context.

**Matrix offers preliminary basis for addressing incommensurability,  
using quantitative and qualitative data**

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# Working through harm assessment process

**Construct business model**



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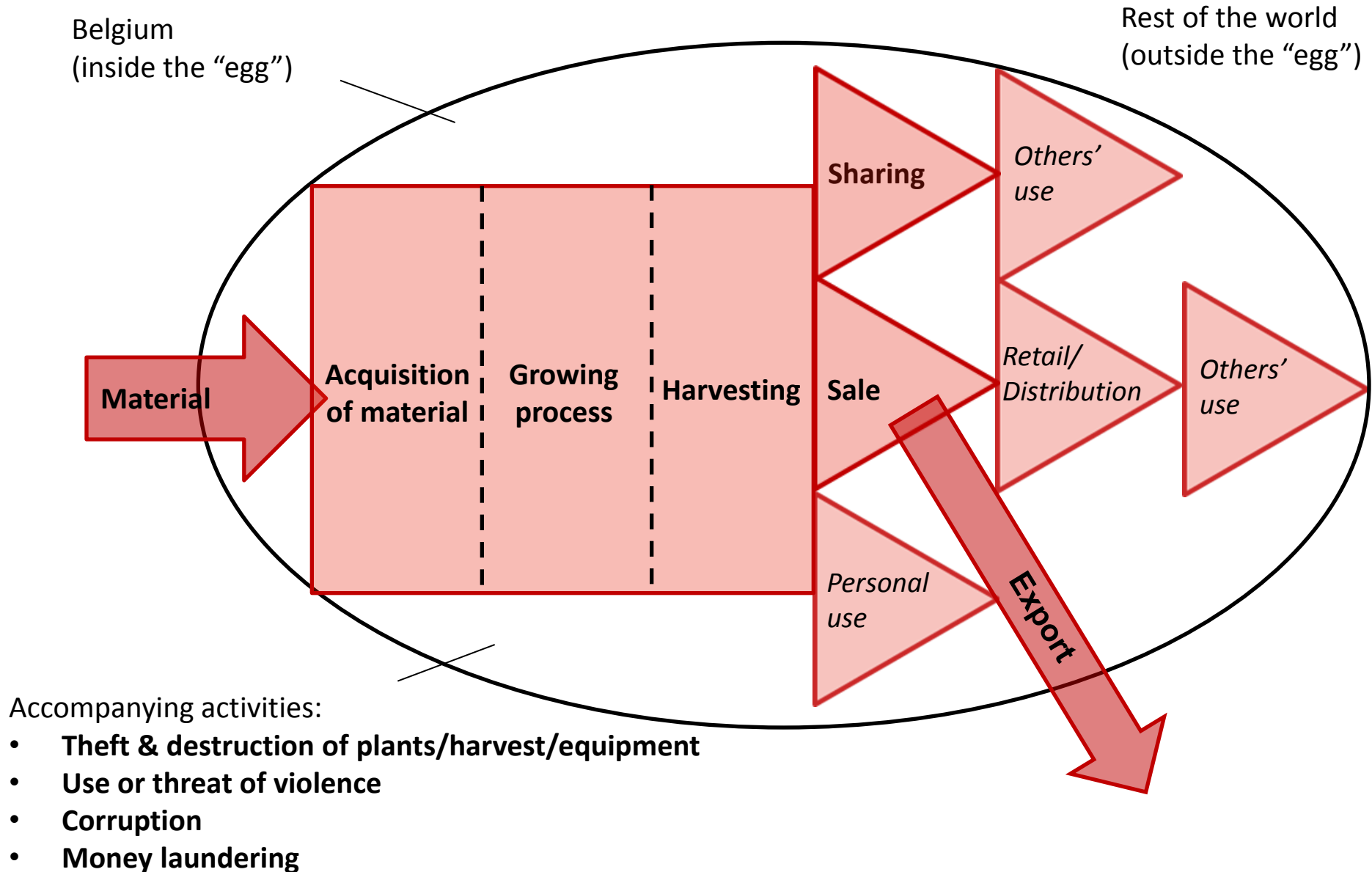


Prioritize harms  
(matrix)



Establish causality of harm

# The business model of cannabis cultivation



# The growing process and related harms

- Most survey respondents (74.1%) cultivate on/in their own property, 50/50 outdoor and indoor, and cause relatively little harm
- Interviewed cultivators grow indoor, in rented properties, occasionally buying owners off or using false IDs
- Electricity theft is source of largest harm in this phase
  - Only 7% of survey respondents, but 18.4% of those cultivating more than 20 plants (n=7) and almost by all growers in criminal justice sources
  - Harms assessed €4,000 to €98,000 per plantation in criminal cases
  - According to Eandis, 80% of recorded amount of theft is cannabis-related; 1,040 cases in 2003-2010; average harm is € 22,018 per case
  - Electricity theft occasionally sets up fires
- Harms sometimes result also from the destruction of property and water overflow
- Dismantling costs in proceedings: 725 - 5,558 euros, 2,339 on average per plantation

# Harvesting and sale and related harms

- Very large-scale cultivators sometimes recruit “cutting teams”
  - In six criminal cases Eastern Europeans were recruited, were paid regular salaries but also “surveilled”
  - Some interviewed cultivators report good treatment of cutters but others and experts suggest exploitation
- Survey respondents with < 20 plants harvest themselves and produce no harm
- Only 8.3 % of survey respondents (36.1% > 20 plants) but all cultivators interviewed and charged in criminal cases are interested in monetary profits
- Some interviewed cultivators admit considerable earnings
  - “Farmgate” price is around €3.500 per Kg
  - 250 plants deliver at least 30 Kg per harvest, thus can be sold at €100,000

# Theft and destruction of plants/harvest/equipment

- Theft and destruction of plants/harvest/equipment occurs to all cultivators
  - 12.8% of survey respondents (17.7% > 20 plants ) admit having been involved in theft of plants, 5.4% (18.2% > 20 plants) in theft of harvest, 1.7% in theft of equipment (9.4% > 20 plants) and 12.1% in destruction of plants (30.3% > 20 plants)
  - 4 interviewed cultivators and 4 criminal cases also report theft of cannabis
- These activities often lead to violence but in our framework, they produce *per se* no harm, as they involve illegal property
- Experts speak of booby traps to discourage theft but other sources provide no supporting evidence



# Use or threat of violence and related harms

- Only 6.6% of survey respondents have direct experience of verbal conflicts, only 1.7% of actual violence
  - Those cultivating more than 20 plants are more frequently involved: 12.9% in verbal conflicts, 6.5% in physical conflicts
  - Some physical conflicts reported have had serious consequences
- Other sources also report little violence
  - Only three out of 20 interviewed cultivators have direct experience of physical violence, two out of 34 criminal cases report a kidnapping and two shoot-outs, seven others threats
  - Consequences can be **serious**: in one case a paralysis
  - Violence is probably underreported in criminal justice sources
- Theft and financial matters **are** important reasons
- Counterparts often known: relatives, friends, customers/suppliers, but also thieves

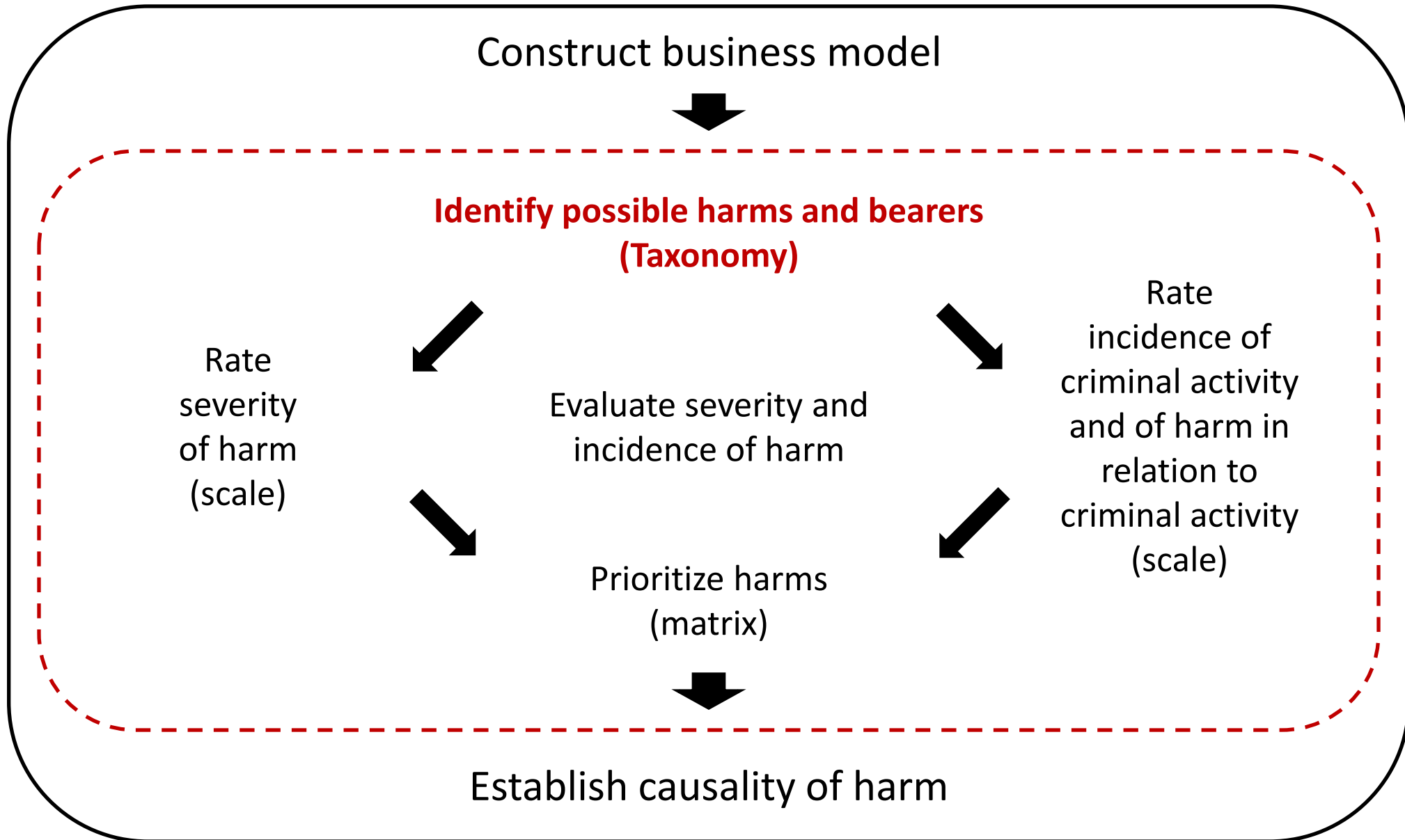
# Corruption and related harms

- According to all sources there is very limited, low-level governmental corruption
  - 9 survey respondents report receiving help of police officers, 8 of other officials
  - Two interviewed cultivators report contacts with law enforcement officers
  - Criminal cases mention small (suspected) favors
- Private-sector representatives are more frequently involved as facilitators
  - 13.3% (n=102) of survey respondents report receiving help from (Dutch) growshops, 5.9% (n=45) from electricians
    - Higher proportion of those cultivating >20 plants, with most experience (>10 harvests) and growing for profit report help from electricians and lawyers
  - Interviewed cultivators and criminal cases also highlight role of growshops and electricians and involvement of real estate agents, logistic enterprises
  - Some of these facilitators work independently, some harm their companies

# Money laundering and related harms

- According to all sources, earnings are primarily used to buy luxury goods and support lush lifestyle but are also reinvested in cannabis cultivation and, more rarely, in other illegal activities
- Earnings suggest that crime pays, thus tainting government's reputation
- Private-sector facilitators are sometimes used to launder money
  - Survey respondents admitted receiving help or advice from lawyers (40), notaries (10), bank officials (11), accountants (6), insurance companies officials (4) and tax advisors (4)
  - A few criminal cases provide evidence of “sophisticated” laundering techniques

# Working through harm assessment process



# Possible harms touch upon many interests

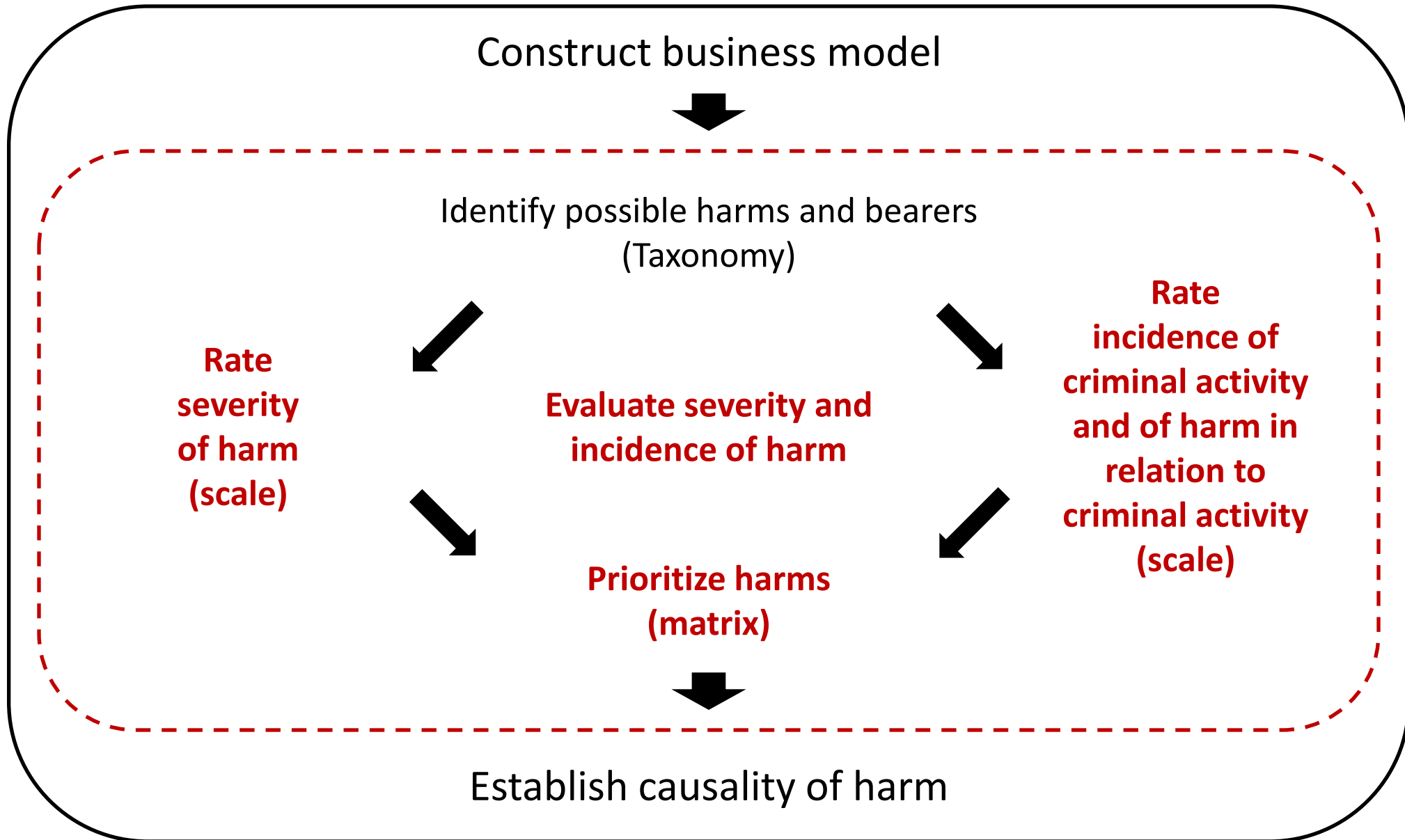
	Growing	Harvesting & sale	Corruption	Violence	Money laundering	Bearers
<b>HARMS TO INDIVIDUALS, specifically to their:</b>						
<b>Functional integrity</b>						
<i>Loss of life</i>	n/a	n/a	n/a	X	n/a	- Cultivators, their relatives, friends, suppliers/customers and thieves, if targeted by use of violence
<i>Other: physical &amp; psychological</i>	n/a	n/a	n/a	X	n/a	- All persons targeted by use of violence
<i>Only psychological</i>	n/a	X	n/a	X	n/a	- All persons targeted by threats - Member of cutting teams, if intimidated
<b>Material interest</b>	X	n/a	n/a	X	n/a	- Ancillary to functional harms, for those targeted by use or threat of violence - Owners of property, if this is damaged
<b>Reputation</b>	n/a	X	n/a	X	n/a	- All persons targeted by use or threat of violence - Owners of property, if this is misused w/o their knowledge
<b>Privacy</b>	X	X	n/a	X	n/a	- Same two categories as for reputation - Member of cutting teams, if controlled

	Growing	Harvesting & sale	Corruption	Violence	Money laundering	Bearer
<b>HARMS TO PRIVATE-SECTOR ENTITIES, specifically to their:</b>						
Functional integrity	n/a	n/a	X	n/a	X	- Specialized shops, electrical companies, farms and law and logistics firms, if corrupt employees misuse assets w/o their knowledge
Material interest	X	n/a	X	n/a	n/a	- Ancillary to functional harms (property) - Electrical companies, if electricity is stolen - Owners of property, if this is damaged
Reputation	X	n/a	X	n/a	X	- Specialized shops, electrical companies, farms and law and logistics firms, if corrupt employees misuse assets w/o their knowledge - Owners of property, if this is damaged
“Privacy”	X	n/a	X	n/a	n/a	- Same two categories as for reputation
<b>HARMS TO GOVERNMENT, specifically to its:</b>						
Functional integrity	n/a	n/a	X	n/a	n/a	- Government agencies, if representatives engage in corrupt practices, incl. neglect of duties
Material interest	n/a	n/a	X	X	n/a	- Ancillary to functional harms (health) - Wages associated with neglect of duties
Reputation	n/a	n/a	X	n/a	n/a	- Government agencies, if representatives engage in corrupt practices, incl. neglect of duties
	X	X	X	X	X	- Government writ large, if it cannot enforce its laws
“Privacy”	n/a	n/a	X	n/a	n/a	- Government agencies, i.e., if officials/representatives engage in corrupt practices, incl. neglect of duties
<b>HARMS TO ENVIRONMENT, specifically to its:</b>						
Functional integrity	X	n/a	n/a	n/a	n/a	- Neighbors, if affected by bad smell and noise

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# Working through harm assessment process





# Cannabis production occurs always

- Sharp increase in number of plant seizures and detected “plantations” (> 2 plants) in Belgium since 2000
  - From 73,334 plants and 35 plantations in 2003 to 337,955 plants and 1,069 plantations in 2011

**Plantations detected by the Belgian Federal Police, by scale, 2007-2011**

<b>Year</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Micro scale: 2-5 plants	66	136	134	209	190
Mini scale: 6-49 plants	130	219	226	313	376
Small scale: 50-249 plants	62	125	166	163	187
Middle scale: 250-499 plants	40	58	72	93	101
Large scale: 500-999 plants	44	63	65	106	119
Industrial scale: >1000 plants	51	45	66	86	88
Seedling farms	5	2	8	9	8
<b>Total</b>	<b>398</b>	<b>648</b>	<b>737</b>	<b>979</b>	<b>1069</b>

*Source: Belgian  
Federal Police,  
2012.*

- At any moment cannabis is being cultivated in Belgium
  - Belgian production feeds Belgian market and Dutch coffeeshops

# Actual harms accrue to individuals\*

	Severity	Incidence**	Priority	Activity
<b>HARMS TO INDIVIDUALS, specifically to their:</b>				
<b>Functional integrity</b>				
<i>Loss of life</i>	Catastrophic	Rarely	<b>M/H<sub>i</sub></b>	Violence
<i>Other physical and psychological</i>	Grave	Rarely	<b>M<sub>i</sub></b>	Violence (i.e., assault causing permanent damages)
	Serious	Rarely	L <sub>i</sub>	Violence (i.e., assault and kidnapping)
	Moderate	Rarely	L <sub>i</sub>	"
	Marginal	Rarely	L <sub>i</sub>	Violence (i.e., petty assault)
<i>Only psychological</i>	Moderate	Rarely	L <sub>i</sub>	Growing, if other persons' ID is used for rent of property
	Marginal	Seldom	L <sub>i</sub>	Violence threatened (i.e., intimidation)
	Marginal	Rarely	L <sub>i</sub>	Harvesting, if cutting teams are intimidated

\*Estimates exclude harms associated with cannabis distribution and use.

\*\*Overall incidence, accounting for incidence of activities and of harms in relation to activities.

# Actual harms accrue to individuals\*

	Severity	Incidence**	Priority	Activity
<b>HARMS TO INDIVIDUALS, specifically to their:</b>				
<b>Material interest</b>	Serious	Seldom to rarely	<b>M/L<sub>i</sub></b>	Growing, if rented properties are seriously damaged (e.g., fire)
	Moderate	Occasionally	<b>M<sub>i</sub></b>	Growing, if rented properties are extensively damaged (e.g., waterflow)
	Marginal	Persistently	<b>M<sub>i</sub></b>	Growing, if rented properties are lightly damaged (e.g., holes in walls)
<b>Reputation</b>				Violence (i.e., all forms of assault)
	Moderate	Rarely	L <sub>i</sub>	Growing, if other persons' ID is used for rent of property
	Marginal	Seldom	L <sub>i</sub>	Violence threatened (i.e., intimidation) Growing, if rented properties are misused w/o the owner's knowledge
<b>Privacy</b>				Violence (i.e., assault and kidnapping)
	Moderate	Rarely	L <sub>i</sub>	Growing, if other persons' ID is used for rent of property
	Marginal	Seldom	L <sub>i</sub>	Growing, if rented properties are misused w/o the owner's knowledge

\*Estimates exclude harms associated with cannabis distribution and use.

\*\*Overall incidence, accounting for incidence of activities and of harms in relation to activities.

# Actual harms also accrue to others\*

	Severity	Incidence**	Priority	Activity
<b>HARMS TO PRIVATE-SECTOR ENTITIES, specifically to their:</b>				
<b>Functional integrity</b>	Marginal	Seldom	L <sub>ps</sub>	Corruption
	Marginal	Rarely	L <sub>ps</sub>	Money laundering
<b>Material interest</b>	Serious	Seldom to rarely	M/L <sub>ps</sub>	Growing, if rented properties are seriously damaged (e.g. fire)
	Moderate	Occasionally	M <sub>ps</sub>	Growing, if rented properties are extensively damaged (e.g. waterflow)
	Marginal	Persistently	M <sub>ps</sub>	Growing, if rented properties are lightly damaged (e.g. holes in walls)
	Marginal	Occasionally	L <sub>ps</sub>	Theft of electricity
	Marginal	Seldom	L <sub>ps</sub>	Corruption
	Marginal	Rarely	L <sub>ps</sub>	Money laundering
<b>Reputation</b>	Marginal	Seldom	L <sub>ps</sub>	Corruption
		Rarely		Growing, if rented properties are misused w/o the owner's knowledge
<b>“Privacy”</b>	Marginal	Seldom	L <sub>ps</sub>	Money laundering
				Corruption
	Marginal	Rarely	L <sub>ps</sub>	Growing, if rented properties are misused w/o the owner's knowledge
	Marginal	Rarely	L <sub>ps</sub>	Money laundering

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\*\*Overall incidence, accounting for incidence of activities and of harms in relation to activities.

# Actual harms also accrue to others\*

	Severity	Incidence**	Priority	Activity
<b>HARMS TO GOVERNMENT, specifically to its:</b>				
<b>Functional integrity</b>	Marginal	Rarely	L <sub>g</sub>	Corruption
<b>Material interest</b>	Moderate	Rarely	L <sub>g</sub>	Violence (i.e., assault causing permanent damages)
	Marginal	Persistently	M <sub>g</sub>	Growing, costs of dismantling plantations
	Marginal	Rarely	L <sub>g</sub>	Violence (i.e., medical treatment of petty assaults) Corruption
<b>Reputation</b>	Marginal	Always	M <sub>g</sub>	All criminal activities (non-enforcement effect)
	Marginal	Rarely	L <sub>g</sub>	Corruption
<b>HARMS TO ENVIRONMENT, specifically to its:</b>				
<b>Functional integrity</b>	Marginal	Rarely	L <sub>e</sub>	Growing (bad smells and noise)

\*Estimates exclude harms associated with cannabis distribution and use.

\*\*Overall incidence, accounting for incidence of activities and of harms in relation to activities.

# Working through harm assessment process

Construct business model



Identify possible harms and bearers  
(Taxonomy)

Rate  
severity  
of harm  
(scale)



Evaluate severity and  
incidence of harm

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(scale)



Prioritize harms  
(matrix)



**Establish causality of harm**

# **Policy plays substantial role in non-use-related harms, other harms TBD**

- Most non-use-related harms arise from illegal status and specific enforcement practices
  - Harms associated with growing and harvesting
  - Harms associated with violence, corruption and money laundering
- Use-related harms to-be-determined
  - Some harms arise from properties of drug, but policy, modes of enforcement, etc. also play part

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# Concluding remarks

- Cannabis production causes various harms to all bearers:
  - Most are low priority but several are medium
  - Growing and violence cause most serious harms
- Illegal status of cannabis and enforcement practices are themselves cause of most non-use-related-harms
  - Are these harms offset by the use-related harms prevented by prohibition?
- Non-use-related harms seem to be not uniformly distributed across different types of cultivators
- What's the best policy recipe to minimize all harms?

# Questions?

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